

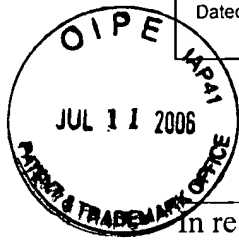
I hereby certify that this correspondence is being deposited with the U.S. Postal Service as Express Mail, Airbill No. EV743885952US, in an envelope addressed to: MS RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

Dated: July 11, 2006

Signature:

*Germaine Sarda*  
(Germaine Sarda)

Docket No.: 564462001811  
(PATENT)



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Jay M. SHORT

Application No.: 10/034,985

Confirmation No.: 9024

Filed: December 21, 2001

Art Unit: 1652

For: RECOMBINANT BACTERIAL PHYTASES  
AND USES THEREOF

Examiner: Delia M. Ramirez, Ph.D.

MS RCE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

DECLARATION UNDER 37 C.F.R. § 1.132

Sir:

1. I, Nelson Barton, Ph.D., am Director for Product Development at DIVERSA CORPORATION, San Diego, CA, the exclusive owner (assignee) of the above-identified patent application.

2. I am an expert in the field of enzyme and feed development. My resume is attached as documentation of my credentials. Additionally, I have been involved in establishing and managing collaborations with food and feed enzyme companies, including Danisco A/S, amongst others.

3. I have read the specification and the file history for the above-referenced patent application and I understand the obviousness-based issues presented by the USPTO in the outstanding office action.

4. I believe that at the time of the invention there was a long-felt need in the food, agricultural feed and biotech industry for an invention such as that set forth in the pending claims, i.e., an invention comprising use of an *E. coli* phytase in a food or a feed. This long-felt need is evidenced by the commercial success of Diversa Corporation's Phyzyme® *E. coli* phytase feed enzyme. Diversa Corporation was the first entity to make and market an *E. coli* phytase feed enzyme (in collaboration with its exclusive licensee).

5. Use of an *E. coli* phytase is at least in part responsible for the commercial success of the claimed feed and food supplement. This invention was the first to realize that because *E. coli* phytases have unique properties that distinguish them from phytases from other organisms, including other bacteria, they would be a better phytase enzyme to use in a food or feed.

6. For example, this invention was the first to realize that because *E. coli* phytases have higher specific activity than phytases from other organisms they would be a better phytase enzyme to use in a food or feed. While it was known in the art at the time of the invention that *E. coli* phytases have higher specific activity than phytases from other organisms, including other bacteria, it was this invention that for the first time realized and exploited this higher specific activity property and used an *E. coli* phytase in a food or feed.

7. Additionally, this invention was the first to realize that because *E. coli* phytases operate at a relatively acidic pH of between about pH of 4.5 to 5.5, and have a better activity in this pH range than phytases from other organisms, including other bacteria, they would be a better phytase enzyme to use in a food or feed (because the stomach environment is one of low pH, enzymes that maintain high activity in acidic conditions can be a preferred choice for use in a food or feed). While it was known in the art at the time of the invention that *E. coli* phytases operate at a relatively

acidic pHs, it was this invention that for the first time realized and exploited this low pH (acidic) activity profile and used an *E. coli* phytase in a food or feed.

8. Furthermore, this invention was the first to realize that because *E. coli* phytases are substrate specific and are very active on phytate and not as active on other phosphate-containing compounds, they would be a better phytase enzyme to use in a food or feed. While it was known in the art at the time of the invention that *E. coli* phytases operate at a relatively acidic pHs, it was this invention that for the first time realized and exploited this substrate activity profile and used an *E. coli* phytase in a food or feed.

9. After the priority date of this application, other food and feed enzyme companies realized the value of this discovery and began to investigate the use *E. coli* phytases in feeds.

10. In summary, it was this invention that for the first time used an *E. coli* phytase in a food or feed to result in a better phytase enzyme-supplemented product, for which there was a long-felt need at the time of the invention.

I hereby declare that all statement made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Respectfully Submitted

Date: July 10, 2006

  
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Nelson Barton

## NELSON R. BARTON

### EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	YEARS	FIELD OF STUDY
University of California Berkeley	B.A.	1980-1984	Molecular Biology
University of Miami Sch of Medicine	Ph.D.	1985-1990	Cellular & Molec. Biology
Harvard University	Postdoctoral	1990-1993	Biochemistry & Genetics
University of California San Diego, HHMI	Postdoctoral	1994-1996	Biochemistry & Genetics

### Research and Professional Experience

- 11/1990 – 12/1993 Postdoctoral Fellow, Harvard University, Department of Cell & Developmental Biology. Under direction of Dr. Lawrence Goldstein. Biochemical characterization of microtubule-associated motor proteins involved in chromosome segregation.
- 1/1994 – 4/1996 Howard Hughes Fellow in the laboratory of Dr. Lawrence Goldstein, Howard Hughes Medical Institute, Div. Of Cellular and Molecular Medicine, Dept. Pharmacology, University of California, San Diego. Biochemical characterization of microtubule-associated motor proteins involved in chromosome segregation.
- 4/1996 – 05/2000 Manager, Biologicals, R&D, Calbiochem Corporation, San Diego, CA  
Developed line of recombinant glycosyltransferases for enzymatic synthesis of oligosaccharides.
- 5/2000 – 12/2002 Sr. Staff Scientist, Diversa Corporation, San Diego, CA.
- 1/2003-Present Principal Scientist, Diversa Corporation, San Diego, CA  
Currently developing high-throughput screening methods for the discovery and optimization of novel enzymes and biomaterials for use in agriculture, chemical processing, industrial and pharmaceutical applications.

### Selected Publications

1. Afshar, K., **N.R. Barton**, R.S. Hawley, and L.S.B. Goldstein (1995). DNA binding and meiotic spindle localization of *Drosophila* NOD kinesin-like protein. *Cell* 81, 129-138.
2. **Barton, N.R.**, A.J. Pereira, and L.S.B. Goldstein (1995). Motor activity and mitotic spindle localization of the *Drosophila* kinesin-like protein KLP61F. *Molec. Biol. Cell* 6, 1563-1574
3. **Barton, N.R.** and L.S.B. Goldstein (1996). Going mobile: microtubule motors and chromosome segregation. *Proc. Natl. Acad. Sci. (USA)* 93, 1735-1742.
4. Ciofalo, V., **N.Barton**, K. Kretz, J. Baird, M. Cook, D. Shanahan (2003). Safety evaluation of a phytase, expressed in *Schizosaccharomyces pombe*, intended for use in animal feed. *Reg. Tox. Pharm.* 37, 286-292.
5. Garrett, J.B., K.A. Kretz, E. O'Donoghue, J. Kerovuo, W. Kim, **N.R. Barton**, G.P. Hazlewood, J.M. Short, D.E. Robertson, K.A. Gray (2004). Enhancing the thermal tolerance and gastric performance of a microbial phytase for use as a phosphate-mobilizing monogastric feed supplement. *Appl. Environ. Microbiol.* 70, 3041-3046.

	10	20	30	40	50	60
US5876997 Fig 1A and 1B	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....					
	ATGAAAGCGATCTTAATCCCATTTTTATCTCTTCTGATTCCGTTAACCCCGCAATCTGCA					
US10/430356 SEQ ID NO:1	MetLysAlaIleLeuIleProPheLeuSerLeuLeuIleProLeuThrProGlnSerAla					
	ATGAAAGCGATCTTAATCCCATTTTTATCTCTTCTGATTCCGTTAACCCCGCAATCTGCA					
	MetLysAlaIleLeuIleProPheLeuSerLeuLeuIleProLeuThrProGlnSerAla					
	70	80	90	100	110	120
US5876997 Fig 1A and 1B	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....					
	TTCGCTCAGAGTGAGCCGAGCTGAAGCTGGAAGTGTGGTGATTGTCACTCGTCATGGT					
US10/430356 SEQ ID NO:1	PheAlaGlnSerGluProGluLeuLysLeuGluSerValValIleValSerArgHisGly					
	TTCGCTCAGAGTGAGCCGAGCTGAAGCTGGAAGTGTGGTGATTGTCACTCGTCATGGT					
	PheAlaGlnSerGluProGluLeuLysLeuGluSerValValIleValSerArgHisGly					
	130	140	150	160	170	180
US5876997 Fig 1A and 1B	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....					
	GTGCGTGCTCCAACCAAGGCCACGCAACTGATGCAGGATGTCACCCAGACGCATGGCCA					
US10/430356 SEQ ID NO:1	ValArgAlaProThrLysAlaThrGlnLeuMetGlnAspValThrProAspAlaTrpPro					
	GTGCGTGCTCCAACCAAGGCCACGCAACTGATGCAGGATGTCACCCAGACGCATGGCCA					
	ValArgAlaProThrLysAlaThrGlnLeuMetGlnAspValThrProAspAlaTrpPro					
	190	200	210	220	230	240
US5876997 Fig 1A and 1B	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....					
	ACCTGGCCGGTAAAACTGGGTTGGCTGACACCGCGNGGTGGTGAGCTAATCGCCTATCTC					
US10/430356 SEQ ID NO:1	ThrTrpProValLysLeuGlyTrpLeuThrProXXXGlyGlyGluLeuIleAlaTyrLeu					
	ACCTGGCCGGTAAAACTGGGTTGGCTGACACCGCGNGGTGGTGAGCTAATCGCCTATCTC					
	ThrTrpProValLysLeuGlyTrpLeuThrProXXXGlyGlyGluLeuIleAlaTyrLeu					
	250	260	270	280	290	300
US5876997 Fig 1A and 1B	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....					
	GGACATTACCAACGCCAGCGTCTGGTAGCCGACGGATTGCTGGCGAAAAAGGGCTGCCCG					
US10/430356 SEQ ID NO:1	GlyHisTyrGlnArgGlnArgLeuValAlaAspGlyLeuLeuAlaLysLysGlyCysPro					
	GGACATTACCAACGCCAGCGTCTGGTAGCCGACGGATTGCTGGCGAAAAAGGGCTGCCCG					
	GlyHisTyrGlnArgGlnArgLeuValAlaAspGlyLeuLeuAlaLysLysGlyCysPro					
	310	320	330	340	350	360
US5876997 Fig 1A and 1B	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....					
	CAGTCTGGTCAGGTCGCGATTATTGCTGATGTCGACGAGCGTACCCGTAATAACAGGCCAA					
US10/430356 SEQ ID NO:1	GlnSerGlyGlnValAlaIleIleAlaAspValAspGluArgThrArgLysThrGlyGlu					
	CAGTCTGGTCAGGTCGCGATTATTGCTGATGTCGACGAGCGTACCCGTAATAACAGGCCAA					
	GlnSerGlyGlnValAlaIleIleAlaAspValAspGluArgThrArgLysThrGlyGlu					
	370	380	390	400	410	420
US5876997 Fig 1A and 1B	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....					
	GCCTTCGCCCGCCGGGCTGGCACCTGACTGTGCAATAACCGTACATACCCAGGCAGATACG					
US10/430356 SEQ ID NO:1	AlaPheAlaAlaGlyLeuAlaProAspCysAlaIleThrValHisThrGlnAlaAspThr					
	GCCTTCGCCCGCCGGGCTGGCACCTGACTGTGCAATAACCGTACATACCCAGGCAGATACG					
	AlaPheAlaAlaGlyLeuAlaProAspCysAlaIleThrValHisThrGlnAlaAspThr					
	430	440	450	460	470	480
US5876997 Fig 1A and 1B	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....					
	TCCAGTCCCGATCCGTTATTTAATCCTCTAAAAACTGGCGTTTGCCAACCTGGATAACGCG					
US10/430356 SEQ ID NO:1	SerSerProAspProLeuPheAsnProLeuLysThrGlyValCysGlnLeuAspAsnAla					
	TCCAGTCCCGATCCGTTATTTAATCCTCTAAAAACTGGCGTTTGCCAACCTGGATAACGCG					
	SerSerProAspProLeuPheAsnProLeuLysThrGlyValCysGlnLeuAspAsnAla					
	490	500	510	520	530	540
US5876997 Fig 1A and 1B	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....					
	AACGTGACTGACGCGATCCTCAGCAGGGCAGGAGGGTCAATTGCTGACTTTACCGGGCAT					
US10/430356 SEQ ID NO:1	AsnValThrAspAlaIleLeuSerArgAlaGlyGlySerIleAlaAspPheThrGlyHis					
	AACGTGACTGACGCGATCCTCAGCAGGGCAGGAGGGTCAATTGCTGACTTTACCGGGCAT					
	AsnValThrAspAlaIleLeuSerArgAlaGlyGlySerIleAlaAspPheThrGlyHis					

	550	560	570	580	590	600
US5876997 Fig 1A and 1B	CGGCAAACGGCGTTTCGCCAACTGGAACGGGTGCTTAATTTTCCGCAATCAAACCTGTGCG					
	ArgGlnThrAlaPheArgGluLeuGluArgValLeuAsnPheProGlnSerAsnLeuCys					
US10/430356 SEQ ID NO:1	CGGCAAACGGCGTTTCGCCAACTGGAACGGGTGCTTAATTTTCCGCAATCAAACCTGTGCG					
	ArgGlnThrAlaPheArgGluLeuGluArgValLeuAsnPheProGlnSerAsnLeuCys					
	610	620	630	640	650	660
US5876997 Fig 1A and 1B	CTTAAACGTGAGAAACAGGACGAAAGCTGTTTCATTAACGCAGGCATTACCATCGGAACTC					
	LeuLysArgGluLysGlnAspGluSerCysSerLeuThrGlnAlaLeuProSerGluLeu					
US10/430356 SEQ ID NO:1	CTTAAACGTGAGAAACAGGACGAAAGCTGTTTCATTAACGCAGGCATTACCATCGGAACTC					
	LeuLysArgGluLysGlnAspGluSerCysSerLeuThrGlnAlaLeuProSerGluLeu					
	670	680	690	700	710	720
US5876997 Fig 1A and 1B	AAGGTGAGCGCCGACAATGTCTCATTAACCGGTGCGGTAAAGCCTCGCATCAATGCTGACG					
	LysValSerAlaAspAsnValSerLeuThrGlyAlaValSerLeuAlaSerMetLeuThr					
US10/430356 SEQ ID NO:1	AAGGTGAGCGCCGACAATGTCTCATTAACCGGTGCGGTAAAGCCTCGCATCAATGCTGACG					
	LysValSerAlaAspAsnValSerLeuThrGlyAlaValSerLeuAlaSerMetLeuThr					
	730	740	750	760	770	780
US5876997 Fig 1A and 1B	GAGATATTTCTCCTGCAACAAGCACAGGGAATGCCGGAGCCGGGTGGGGAAGGATCACC					
	GluIlePheLeuLeuGlnGlnAlaGlnGlyMetProGluProGlyTrpGlyArgIleThr					
US10/430356 SEQ ID NO:1	GAGATATTTCTCCTGCAACAAGCACAGGGAATGCCGGAGCCGGGTGGGGAAGGATCACC					
	GluIlePheLeuLeuGlnGlnAlaGlnGlyMetProGluProGlyTrpGlyArgIleThr					
	790	800	810	820	830	840
US5876997 Fig 1A and 1B	GATTCACACCAGTGGAAACACCTTGCTAAGTTTGCATAACGCGCAATTTTATTTGCTACAA					
	AspSerHisGlnTrpAsnThrLeuLeuSerLeuHisAsnAlaGlnPheTyrLeuLeuGln					
US10/430356 SEQ ID NO:1	GATTCACACCAGTGGAAACACCTTGCTAAGTTTGCATAACGCGCAATTTTATTTGCTACAA					
	AspSerHisGlnTrpAsnThrLeuLeuSerLeuHisAsnAlaGlnPheTyrLeuLeuGln					
	850	860	870	880	890	900
US5876997 Fig 1A and 1B	CGCACGCCAGAGGTTGCCCGCAGCCGCGCCACCCCGTTATTGGATTGATCATGGCAGCG					
	ArgThrProGluValAlaArgSerArgAlaThrProLeuLeuAspLeuIleMetAlaAla					
US10/430356 SEQ ID NO:1	CGCACGCCAGAGGTTGCCCGCAGCCGCGCCACCCCGTTATTGGATTGATCATGGCAGCG					
	ArgThrProGluValAlaArgSerArgAlaThrProLeuLeuAspLeuIleMetAlaAla					
	910	920	930	940	950	960
US5876997 Fig 1A and 1B	TTGACGCCCCATCCACCGCAAAAACAGGCGTATGGTGTGACATTACCCACTTCAGTACTG					
	LeuThrProHisProProGlnLysGlnAlaTyrGlyValThrLeuProThrSerValLeu					
US10/430356 SEQ ID NO:1	TTGACGCCCCATCCACCGCAAAAACAGGCGTATGGTGTGACATTACCCACTTCAGTACTG					
	LeuThrProHisProProGlnLysGlnAlaTyrGlyValThrLeuProThrSerValLeu					
	970	980	990	1000	1010	1020
US5876997 Fig 1A and 1B	TTTATTGCGCGACACGATACTAATCTGGCAAATCTCGGCGGCGCACTGGAGCTCAACTGG					
	PheIleAlaGlyHisAspThrAsnLeuAlaAsnLeuGlyGlyAlaLeuGluLeuAsnTrp					
US10/430356 SEQ ID NO:1	TTTATTGCGCGACACGATACTAATCTGGCAAATCTCGGCGGCGCACTGGAGCTCAACTGG					
	PheIleAlaGlyHisAspThrAsnLeuAlaAsnLeuGlyGlyAlaLeuGluLeuAsnTrp					
	1030	1040	1050	1060	1070	1080
US5876997 Fig 1A and 1B	ACGCTTCCCGGTCAGCCGGATAACACGCCCGCCAGGTGGTGAACCTGGTGTGTTGAACGCTGG					
	ThrLeuProGlyGlnProAspAsnThrProProGlyGlyGluLeuValPheGluArgTrp					
US10/430356 SEQ ID NO:1	ACGCTTCCCGGTCAGCCGGATAACACGCCCGCCAGGTGGTGAACCTGGTGTGTTGAACGCTGG					
	ThrLeuProGlyGlnProAspAsnThrProProGlyGlyGluLeuValPheGluArgTrp					

ThrLeuProGlyGlnProAspAsnThrProProGlyGlyGluLeuValPheGluArgTrp

	1090	1100	1110	1120	1130	1140
	....	....	....	....	....	....
US5876997 Fig 1A and 1B	CGTCGGCTAAGCGATAACAGCCAGTGGATTTCAGGTTTCGCTGGTCTTCCAGACTTTACAG					
	ArgArgLeuSerAspAsnSerGlnTrpIleGlnValSerLeuValPheGlnThrLeuGln					
US10/430356 SEQ ID NO:1	CGTCGGCTAAGCGATAACAGCCAGTGGATTTCAGGTTTCGCTGGTCTTCCAGACTTTACAG					
	ArgArgLeuSerAspAsnSerGlnTrpIleGlnValSerLeuValPheGlnThrLeuGln					

	1150	1160	1170	1180	1190	1200
	....	....	....	....	....	....
US5876997 Fig 1A and 1B	CAGATGCGTGATAAAACGCCGCTGTCATTAAATACGCCGCCCGGAGAGGTGAAACTGACC					
	GlnMetArgAspLysThrProLeuSerLeuAsnThrProProGlyGluValLysLeuThr					
US10/430356 SEQ ID NO:1	CAGATGCGTGATAAAACGCCGCTGTCATTAAATACGCCGCCCGGAGAGGTGAAACTGACC					
	GlnMetArgAspLysThrProLeuSerLeuAsnThrProProGlyGluValLysLeuThr					

	1210	1220	1230	1240	1250	1260
	....	....	....	....	....	....
US5876997 Fig 1A and 1B	CTGGCAGGATGTGAAGAGCGAAATGCCGAGGCCATGTCTTCGTTGGCAGGTTTTACGCAA					
	LeuAlaGlyCysGluGluArgAsnAlaGlnGlyMetCysSerLeuAlaGlyPheThrGln					
US10/430356 SEQ ID NO:1	CTGGCAGGATGTGAAGAGCGAAATGCCGAGGCCATGTCTTCGTTGGCAGGTTTTACGCAA					
	LeuAlaGlyCysGluGluArgAsnAlaGlnGlyMetCysSerLeuAlaGlyPheThrGln					

	1270	1280	1290	1300	1310	1320
	....	....	....	....	....	....
US5876997 Fig 1A and 1B	ATCGTGAATGAAGCACGCATACCGCGCTGCAGTTTGAGATCTCATCACCATCACCATCAC					
	IleValAsnGluAlaArgIleProAlaCysSerLeuArgSerHisHisHisHisHisHis					
US10/430356 SEQ ID NO:1	ATCGTGAATGAAGCACGCATACCGCGCTGCAGTTTGAGATCTCATCACCATCACCATCAC					
	IleValAsnGluAlaArgIleProAlaCysSerLeuArgSerHisHisHisHisHisHis					

US5876997 Fig 1A and 1B	....
	TAA
	End
US10/430356 SEQ ID NO:1	TAA
	End

	10	20	30	40	50	60
US5876997 Fig 1A and 1B	MKAILIPFLSLLIPLTPQSAFAQSEPELKLESVVIVSRHGVRAPTKATQQLMQDVTDPDAWP					
US10/430356 SEQ ID NO:2	MKAILIPFLSLLIPLTPQSAFAQSEPELKLESVVIVSRHGVRAPTKATQQLMQDVTDPDAWP					
	70	80	90	100	110	120
US5876997 Fig 1A and 1B	TWPVKLGWLTPXGGELIAYLGHYQRQRLVADGILLAKKGCPQSGQVAIIADVDERTRKTGE					
US10/430356 SEQ ID NO:2	TWPVKLGWLTPXGGELIAYLGHYQRQRLVADGILLAKKGCPQSGQVAIIADVDERTRKTGE					
	130	140	150	160	170	180
US5876997 Fig 1A and 1B	AFAAGLAPDCAITVHTQADTSSPDPLENPLKTGVCQLDNANVTDAILSRAGGSIADEFTGH					
US10/430356 SEQ ID NO:2	AFAAGLAPDCAITVHTQADTSSPDPLENPLKTGVCQLDNANVTDAILSRAGGSIADEFTGH					
	190	200	210	220	230	240
US5876997 Fig 1A and 1B	RQTAFRELERVLNFPQSNLCLKREKQDESCSLTQALPSELKVSADNVSLTGAVSLASMLT					
US10/430356 SEQ ID NO:2	RQTAFRELERVLNFPQSNLCLKREKQDESCSLTQALPSELKVSADNVSLTGAVSLASMLT					
	250	260	270	280	290	300
US5876997 Fig 1A and 1B	EIFLLQQAQGMPEPGWGRITDShQWNTLLSLHNAQFYLLQRTPEVARSRATPLLDLIMAA					
US10/430356 SEQ ID NO:2	EIFLLQQAQGMPEPGWGRITDShQWNTLLSLHNAQFYLLQRTPEVARSRATPLLDLIMAA					
	310	320	330	340	350	360
US5876997 Fig 1A and 1B	LTPHPPQKQAYGVTLP TSVLFIAGHDTNLANLGGALELNWTLPGQPDNTPPGGELVFERW					
US10/430356 SEQ ID NO:2	LTPHPPQKQAYGVTLP TSVLFIAGHDTNLANLGGALELNWTLPGQPDNTPPGGELVFERW					
	370	380	390	400	410	420
US5876997 Fig 1A and 1B	RRLSDNSQWIQVSLVFQTLQQMRDKTPLSLNTPPGEVKLTLAGCEERNAQGMCSLAGFTQ					
US10/430356 SEQ ID NO:2	RRLSDNSQWIQVSLVFQTLQQMRDKTPLSLNTPPGEVKLTLAGCEERNAQGMCSLAGFTQ					
	430	440				
US5876997 Fig 1A and 1B	IVNEARIPACSLRSHHHHHH*					
US10/430356 SEQ ID NO:2	IVNEARIPACSLRSHHHHHH*					